

IN THE CLAIMS

1. (Currently Amended) A device comprising:
 - a network interface for coupling to a network; and
 - ~~a processor~~ one or more processors coupled with the network interface, in which the ~~processor is~~ processors are adapted to:
 - receive voice signals;
 - group the voice signals into a plurality of serial data speech frames;
 - analyze the voice signals of at least some of the data speech frames to classify each in one of a plurality of different types of speech;
 - determine a comparative discardability for some of the data speech frames relative to others from the type of speech;
 - encapsulate the data speech frames into data packets, at least some of the data packets including a comparative discardability code indicating the determined comparative discardability of the encapsulated data speech frames; and
 - transmit the data packets through a packet switched network;
 - wherein determining a comparative discardability for the classified serial data speech frames further includes comparing one of the data speech frames to adjacent frames and associating a different comparative discardability with the data speech frame when there are differences between the frame and the adjacent frames.
2. (Original) The device of claim 1, in which the comparative discardability code is in an extension of an RTP header.
3. (Previously Presented) The device of claim 1, in which the types of speech include voiced and polsive sounds.
4. (Currently Amended) The device of claim 1, in ~~which~~ which:
 - one of the types of speech is silence, and
 - a data packet encapsulating a frame of silence is assigned a high comparative discardability.

5. (Currently Amended) The device of claim 1, in ~~which~~ which:
a data packet encapsulating a frame that transitions from one type of speech to another is assigned a low comparative discardability.

6. (Currently Amended) A device comprising:
a network interface for coupling to a packet switched network; and
~~a processor~~ one or more processors coupled with the network interface, in which the ~~processor is~~ processors are adapted to:
receive voice signals;
group the voice signals into a plurality of serial data speech frames;
analyze the voice signals of at least some of the data speech frames to classify each in one of a plurality of different types of speech;
determine a comparative discardability for some of the data speech frames relative to others from the type of speech;
encapsulate the data speech frames into data packets, at least some of the data packets including a comparative discardability code indicating the determined comparative discardability of the encapsulated data speech frames; and
transmit the data packets through ~~[[a]]~~ the packet switched network;
in which the ~~processor is~~ processors are further adapted to:
~~assigning~~ assign a similar comparative discardability to a first preset number of serially occurring data speech frames of a first one of the types of speech; and
~~assigning~~ assign a next occurring data speech frame of the first type of speech a higher comparative discardability.

7. (Currently Amended) The device of claim 6, in which the ~~processor is~~ processors are further adapted to:
~~assigning~~ assign a similar comparative discardability to a second preset number of serially occurring data speech frames of a second one of the types of speech; and

~~assigning~~ assign a next occurring data speech frame of the second type of speech a higher comparative discardability,

in which the first preset number is different from the second preset number.

8. (Currently Amended) A device comprising:

a network interface for coupling to a packet switched network; and

~~a processor~~ one or more processors coupled with the network interface, in which the ~~processor is~~ processors are adapted to:

receive voice data packets through ~~[[a]]~~ the packet switched network, the voice data packets encoding a data speech frame that contains a first type of speech, a second type of speech and a transition type of speech that occurs during a transition between the first and second types of speech;

~~store the received packets in a buffer;~~

~~retransmit some of the stored packets through the network;~~

extract a comparative discardability code of a specific one of the ~~stored~~ received packets ~~relative to the others, the comparative discardability code indicating whether the specific packet corresponds to the transition type of speech or another type of speech wherein the comparative discardability code is related to a preset type of encoded speech; and~~

~~make a discard decision for the specific packet in accordance with the~~ determine whether to transmit the specific packet according to the extracted comparative discardability code that indicates whether the specific packet corresponds to the transition type of speech or another type of speech and the preset type of speech; and

~~delete the specific packet without retransmitting it if the discard decision is to drop the packet;~~

~~wherein a percentage of non-transition packets that are deleted is greater than a percentage of transition packets that are deleted.~~

9. (Currently Amended) The device of claim 8, in which the ~~processor is~~ processors are further adapted to:

sense a congestion in the packet switched network, and

in which the comparative discardability code is extracted responsive to sensing the congestion.

10. (Currently Amended) The device of claim 8, in which the ~~processor~~ is processors are further adapted to:

set a discarding probability in accordance with the ~~analyzed~~ comparative discardability code, and

in which the ~~discard decision~~ transmission determination is made in accordance with the set discarding probability.

11. (Previously Presented) A device comprising:

- means for receiving voice signals;
- means for grouping the voice signals into a plurality of serial data speech frames;
- means for analyzing the voice signals of at least some of the data speech frames to classify each in one of a plurality of different types of speech;
- means for determining a comparative discardability for some of the data speech frames relative to others from the type of speech;
- means for encapsulating the data speech frames into data packets, at least some of the data packets including a comparative discardability code indicating the determined comparative discardability of the encapsulated data speech frames; and
- means for transmitting the data packets through a packet switched network;

in which a data packet encapsulating frame that is associated with a transition from one type of speech to another is assigned a low comparative discardability.

12. (Original) The device of claim 11, in which the comparative discardability code is in an extension of an RTP header.

13. (Previously Presented) The device of claim 11, in which the types of speech include voiced and polsive sounds.

14. (Currently Amended) The device of claim 11, in ~~which~~ which:
one of the types of speech is silence, and
a data packet encapsulating a frame of silence is assigned a high comparative
discardability.

15. (Cancelled)

16. (Previously Presented) A device comprising:
means for receiving voice signals;
means for grouping the voice signals into a plurality of serial data speech frames;
means for analyzing the voice signals of at least some of the data speech frames to
classify each in one of a plurality of different types of speech;
means for determining a comparative discardability for some of the data speech frames
relative to others from the type of speech;
means for encapsulating the data speech frames into data packets, at least some of the
data packets including a comparative discardability code indicating the determined comparative
discardability of the encapsulated data speech frames;
means for transmitting the data packets through a packet switched network;
means for assigning a similar comparative discardability to a first preset number of
serially occurring data speech frames of a first one of the types of speech; and
means for assigning a next occurring data speech frame of the first type of speech a
higher comparative discardability.

17. (Original) The device of claim 16, further comprising:
means for assigning a similar comparative discardability to a second preset number of
serially occurring data speech frames of a second one of the types of speech; and
means for assigning a next occurring data speech frame of the second type of speech a
higher comparative discardability,
in which the first preset number is different from the second preset number.

18. (Currently Amended) A device comprising:
means for receiving voice data packets through a packet switched network;
means for storing the received packets in a buffer;
means for retransmitting some of the stored packets through the packet switched network;
means for extracting a comparative discardability code of a specific one of the stored packets relative to the others, wherein the comparative discardability code is related to a preset type of encoded speech;
means for making a discard decision for the specific packet in accordance with the extracted comparative discardability code and the preset type of speech; and
means for deleting the specific packet without ~~retransmitting it if~~ transmission when the discard decision is to drop the packet;
wherein the extracted comparative discardability code for at least one packet is based on both attributes of a source voice data frame for the packet and attributes of non-source voice data frames.

19. (Currently Amended) The device of claim 18, further comprising:
means for sensing a congestion in the packet switched network, and
in which the comparative discardability code is extracted responsive to sensing the congestion.

20. (Original) The device of claim 18, further comprising:
means for setting a discarding probability in accordance with the analyzed comparative discardability code,
in which the discard decision is made in accordance with the set discarding probability.

21. (Currently Amended) An article comprising: a storage medium, the storage medium having instructions stored thereon, in which when the instructions are executed by at least one device, they the instructions result in:
identifying a predetermined type of sound, the predetermined type of sound corresponding to an abrupt release of a complete closure in a vocal tract, the abrupt release of the

complete closure allowing air particles located in a high pressure region behind the complete closure to travel to a low pressure region in front of the complete closure and towards a mouth;

receiving voice signals;

grouping the voice signals into a plurality of serial data speech frames;

analyzing the voice signals ~~of at least some of the data speech frames~~ to classify at least one of the data speech frames as containing the predetermined type of sound ~~each in one of a plurality of different types of speech;~~

~~determining a comparative discardability for some of the data speech frames relative to others from the type of speech;~~

~~encapsulating the data speech frames into data packets, at least some of the data packets including a comparative discardability code indicating the determined comparative discardability of the encapsulated data speech frames; and~~

encapsulating the classified data speech frame containing the predetermined type of sound into a first group of packets;

assigning the first group of packets a first comparative discardability code that is different than a second comparative discardability code assigned to a second group of packets
representing a different data speech frame that does not include the predetermined type of sound;
and

transmitting the first and second groups of data packets through a packet switched network.

22. (Currently Amended) The article of claim 21, in which the first comparative discardability code is in an extension of an RTP header.

23. (Currently Amended) The article of claim 21, in which the second packets correspond to types of speech include voiced and plosive sounds.

24. (Currently Amended) The article of claim 21, in which which:
the second packets correspond to silence, and
~~one of the types of speech is silence, and~~

the second comparative discardability code indicates greater discardability than the first comparative discardability code.

~~a data packet encapsulating a frame of silence is assigned a high comparative discardability.~~

25. (Currently Amended) The article of claim 21, in which the second packets correspond to transition speech and the second comparative discardability code identifies a lower discardability than the first comparative discardability code ~~a data packet encapsulating a frame that transitions from one type of speech to another is assigned a low comparative discardability.~~

26. (Currently Amended) The article of claim 21, in which the instructions further result in:

assigning a similar comparative discardability to a first preset number of serially occurring data speech frames of a ~~first one of the types~~ same type of speech; and

assigning a next occurring data speech frame of the ~~first~~ same type of speech a higher comparative discardability.

27. (Currently Amended) The article of claim 26, in which the instructions further result in:

assigning a ~~similar~~ common comparative discardability to a second preset number of serially occurring data speech frames of a ~~second one of the types~~ homogenous type of speech; and

assigning a next occurring data speech frame of the ~~second~~ homogenous type of speech a higher comparative discardability,

in which the first preset number is different from the second preset number.

28. (Currently Amended) An article comprising: a storage medium, the storage medium having instructions stored thereon, in which when the instructions are executed by at least one device, ~~they~~ the instructions result in:

receiving voice data packets through a packet switched network;

storing the received packets in a buffer;

retransmitting some of the stored packets through the packet switched network;
extracting a comparative discardability code of a specific one of the stored packets relative to the others, wherein the comparative discardability code is related to a preset type of encoded speech;
making a discard decision for the specific packet in accordance with the extracted comparative discardability code and the preset type of speech; and
deleting the specific packet without transmission when retransmitting it if the discard decision is to drop the packet;
wherein the comparative discardability code is further related to a speech type transition.

29. (Currently Amended) The article of claim 28, in which the instructions further result in:

sensing a congestion in the packet switched network, and
in which the comparative discardability code is extracted responsive to sensing the congestion.

30. (Original) The article of claim 28, in which the instructions further result in:
setting a discarding probability in accordance with the analyzed comparative discardability code,
in which the discard decision is made in accordance with the set discarding probability.

31. (Previously Presented) A method comprising:
receiving voice signals;
grouping the voice signals into a plurality of serial data speech frames;
analyzing the voice signals of at least some of the data speech frames to classify each in one of a plurality of different types of speech,
analyzing the serial classified frames for speech type transitions,
identifying voice data speech frames both immediately preceding and immediately following the speech type transitions,
determining a comparative discardability for some of the data speech frames relative to others from the type of speech;

varying the comparative discardability determinations according to the identified frames;
encapsulating the data speech frames into data packets, at least some of the data packets
including a comparative discardability code indicating the determined comparative discardability
of the encapsulated data speech frames; and
transmitting the data packets through a packet switched network.

32. (Original) The method of claim 31, in which the comparative discardability code
is in an extension of an RTP header.

33. (Previously Presented) The method of claim 31, in which the types of speech
include voiced and plosive sounds.

34. (Currently Amended) The method of claim 31, in ~~which~~ which:
one of the types of speech is silence, and
a data packet encapsulating a frame of silence is assigned a high comparative
discardability.

35. (Original) The method of claim 31, in which a data packet encapsulating a frame
that transitions from one type of speech to another is assigned a low comparative discardability.

36. (Previously Presented) A method comprising:
receiving voice signals;
grouping the voice signals into a plurality of serial data speech frames;
analyzing the voice signals of at least some of the data speech frames to classify each in
one of a plurality of different types of speech,
determining a comparative discardability for some of the data speech frames relative to
others from the type of speech;
encapsulating the data speech frames into data packets, at least some of the data packets
including a comparative discardability code indicating the determined comparative discardability
of the encapsulated data speech frames;
transmitting the data packets through a packet switched network;

assigning a similar comparative discardability to a first preset number of serially occurring data speech frames of a first one of the types of speech; and
assigning a next occurring data speech frame of the first type of speech a higher comparative discardability.

37. (Original) The method of claim 36, further comprising:
assigning a similar comparative discardability to a second preset number of serially occurring data speech frames of a second one of the types of speech; and
assigning a next occurring data speech frame of the second type of speech a higher comparative discardability,
in which the first preset number is different from the second preset number.

38. (Currently Amended) A method comprising:
~~receiving voice data packets~~ packetized data representing a sound that contains a transition type of speech and a non-transition type of speech through a packet-switched network;
~~storing the received packets in a buffer;~~
~~retransmitting some of the stored packets through the network;~~
extracting [[a]] comparative discardability codes from the packetized data code of a specific one of the stored packets relative to the others, the comparative discardability codes indicating a different discardability for first packets representing the transition type of speech and second packets representing the non-transition type of speech wherein the comparative discardability code is related to a preset type of encoded speech; and
~~making a discard decision for~~ discarding either the first or second packets according to specific packet in accordance with the extracted comparative discardability codes. code and the preset type of speech; and
~~deleting the specific packet without retransmitting it if the discard decision is to drop the packet;~~
~~wherein a percentage of transition packets that are deleted is not greater than a percentage of non-transition packets that are deleted.~~

39. (Currently Amended) The method of claim 38, further comprising:
sensing a congestion in ~~[[the]]~~ a network, and
in which the comparative discardability ~~code~~ codes are extracted responsive to sensing
the congestion.

40. (Currently Amended) The method of claim 38, further comprising:
setting a discarding probability in accordance with the ~~analyzed~~ comparative
discardability ~~code~~ codes,
in which ~~the discard decision~~ discarding is ~~made in accordance with~~ according to the set
discarding probability.

41. (Previously Presented) The device of claim 1 wherein the device is incorporated
in an IP (Internet Protocol) telephone.

42. (Currently Amended) The device of claim 1, wherein the device is incorporated
in a voice gateway separating a circuit switched network and ~~[[a]]~~ the packet switched network.

43. (Previously Presented) The device of claim 1, wherein a different comparative
discardability is associated with the data speech frame when either of the adjacent speech frames
have a different speech type than the frame.

44. (Previously Presented) The device of claim 43, wherein a low comparative
discardability is associated with the data speech frame when either of the adjacent speech frames
have a different speech type than the frame.

45. (Currently Amended) The device of claim 43 ~~claim 44~~, wherein a high
comparative discardability is associated with the data speech frame when both of the adjacent
speech frames have a same speech type as the frame.

46. (New) A method, comprising:
providing packets representing voice signals;
classifying packets representing sounds produced by manipulation of a degree of closure in a mouth end of a vocal tract into a vocal tract mouth-end-manipulation sound group;
classifying packets representing sounds produced by forcing air through tensed vocal cords in a glottis end of the vocal tract independently of any closures in the mouth end of the vocal tract into a voiced sound group;
assigning packets classified in the vocal tract mouth-end-manipulation sound group a different comparative discardability than the packets classified in the voiced sound group; and
transmitting both groups of assigned packets over a packet switched network to an endpoint.

47. (New) The method of claim 46 wherein the packets classified in the vocal tract mouth-end-manipulation sound group represent sounds that are produced when pressure behind a complete closure in the mouth end of the vocal tract is abruptly released.

48. (New) The method of claim 46 wherein the packets classified in the vocal tract mouth-end-manipulation sound group represent sounds that are produced when air is forced through a partial closure in the mouth end of the vocal tract.

49. (New) The method of claim 46 wherein the packets classified in the voiced sound group represent voiced sounds that are produced when the mouth end of the vocal tract is completely open.